WHAT IS CLAIMED IS:

1. A method of making a probe array for capturing a target substance comprising the steps of:

synthesizing a plurality of probes immobilized at a plurality of matrix sites on a substrate by sequential synthesis where constitutional units are added one by one to a plurality of basal parts immobilized to the substrate until a desired length is obtained; and

coupling a labeling compound to a terminus of the probe of the desired length.

2. The method according to claim 1, wherein the probe is a nucleic acid.

3. The method according to claim 2, wherein the nucleic acid is a DNA, an oligonucleotide, or a peptide nucleic acid.

4. The method according to claim 3, wherein the nucleic acid is a DNA and the sequential synthesis is a phosphoramidite method comprising the steps of:
(1) deprotecting hydroxyl groups bonded to the surface of a solid substrate via a linker;
(2) coupling the deprotected hydroxyl group to the 3'phosphorous group of an amidite monomer having a desired base;

(3) capping the hydroxyl groups not reacted in step(2);
(4) oxidizing the coupled amidite in step (3) from phosphite to phosphate;
(5) deprotecting a 5' hydroxyl moiety of the coupled amidite in step (2);
(6) repeating steps (2) to (5) to obtain an oligonucleotide of a desired length and base sequence in a direction from 3' to 5'; and
(7) deprotecting the bases.

5. The method according to claim 1, wherein the probe is a protein.

6. The method according to claim 1, wherein the probe is an oligopeptide.

7. The method according to claim 1, wherein the labeled substance coupled to the terminus of the probe is a fluorescent substance.

8. The method according to claim 7, wherein the labeled substance is a fluorescent dye.

9. The method according to claim 1, wherein the labeled substance coupled to the terminus of the probe is different from a labeled substance coupled to the target substance.

10. A probe array comprising a plurality of probes immobilized at a plurality of matrix sites on a substrate for capturing a target substance, wherein the probes are sequentially synthesized at the matrix sites on the substrate until a desired length, the probes are different from each other, and a labeling compound is coupled to each terminus of the probes in a final step of the synthesis.

11. A method of measuring an amount of a probe in a probe array wherein the probe array comprises a plurality of probes immobilized at a plurality of matrix sites on a substrate for capturing a target substance, the probes are sequentially synthesized at the matrix sites on the substrate until a desired length, the probes are different from each other, and a labeling compound is coupled to each terminus of the probes in a final step of the synthesis, comprising the step of measuring an amount of the labeling compound at each matrix site.

12. A method for evaluating an amount of a target substance comprising the steps of:

reacting a probe array and a target substance wherein the probe array comprises a plurality of probes immobilized at a plurality of matrix sites on a substrate for capturing a target substance, the probes

are sequentially synthesized at the matrix sites on the substrate until a desired length, the probes are different from each other, and a labeling compound is coupled to each terminus of the probes in a final step of the synthesis;

measuring an amount of the labeling compound at each matrix site to determine an amount of the probe at the matrix site;

measuring an amount of a labeled target substance captured by the probe at the matrix site; and

comparing the amount of the probe with the amount of the labeled target substance.

13. The method according to claim 12, wherein the amount of the labeling compound coupled to the probe is compared with an amount of the labeling compound directly bonded to the substrate at a predetermined matrix site on the surface of the substrate during a first step of the sequential synthesis without elongation reaction.

14. A method of evaluating an amount of a target substance comprising the steps of:

reacting a probe array and a target substance, wherein the probe array comprises a plurality of probes immobilized at a plurality of matrix sites on a substrate for capturing a target substance, the probes

are sequentially synthesized at the matrix sites on the substrate until a desired length, the probes are different from each other, and a labeling compound is coupled to each terminus of the probes in a final step of the synthesis;

measuring an amount of the labeling compound at each matrix site to determine an amount of the probe at the matrix site;

measuring an amount of a labeled target substance captured by the probe at the matrix site;

measuring an amount of the labeling compound directly bonded to the substrate at a predetermined matrix site on the surface of the substrate during a first step of the sequential synthesis without elongation reaction; and

comparing the amount of the probe, the amount of the labeled target substance, and the amount of the directly bonded labeling compound.